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## Technical Disclosure Section

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## CLEANING SHEET

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[There are no amendments to this patent.]

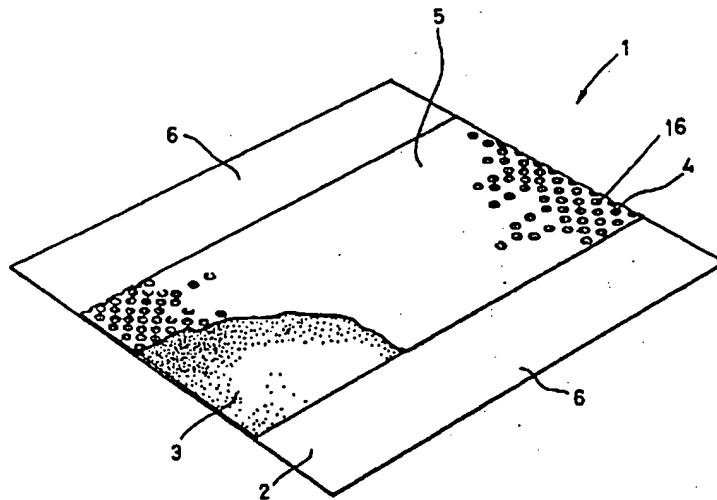
#### Summary

#### Problem

To obtain a cleaning sheet which has a favorable slide with respect to the floor surface and has strong dust holding strength.

#### Means to solve

At least one side of cleaning sheet (1) for wiping dirt and contaminants is comprised of first surface area (5) with weak adhesive properties or noadhesive properties and second surface area (4) with strong adhesive properties and second surface area (4) is at a position which separates upward from the floor surface when first surface area (5) makes contact with the floor surface.



### Claims

1. A cleaning sheet for wiping dirt and contaminants off the floor surface[;] said cleaning sheet characterized by the fact that at least one of the two sides of said sheet is comprised of a first surface area and a second surface area which is positioned above since it is separated from the floor when said first surface area contacts the floor surface, said first surface

area has relatively weak adhesive properties or is non-adhesive and said second surface area has relatively strong adhesive properties.

2. A cleaning sheet noted in Claim 1 in which said sheet is comprised of a base sheet, a double-sided adhesive sheet which is joined to at least one of the two sides of said base sheet, and a mesh material which is joined to said adhesive sheet, the top surface of said mesh material forms said first surface area, and said adhesive sheet section exposed by said mesh material forms said second surface area.

3. A cleaning sheet noted in Claim 1 in which said first surface area and second surface area are arranged alternately in at least one direction.

4. A cleaning sheet noted in Claim 1 in which said first surface area and the second surface area are extending continuously in the same direction.

5. A cleaning sheet noted in Claim 1 in which the elasticity in the thickness direction of said first surface area is greater than that of said second surface area.

#### Detailed explanation of the invention

[0001]

#### Technical field of the invention

This invention relates to a cleaning sheet for wiping dirt and contaminants off the floor surface.

[0002]

Prior art

Conventionally, sheets with a raised nonwoven fabric, an oily agent impregnated in a nonwoven fabric, an adhesive coated to the sheet which becomes the base material, etc. were publicly known as this type of sheet.

[0003]

Problem to be solved by the invention

In sheets with a raised nonwoven fabric from the group of said publicly known cleaning sheets, the slide with respect to the floor surface is favorable but the strength for holding relatively heavy contaminants such as sand, etc. is inferior so these are not suited for wiping such contaminants. Sheets with an oily agent impregnated in a nonwoven fabric are improved in contaminant holding strength but not always sufficiently. Cleaning sheets which used an adhesive may have superior contaminant holding strength but the slide with respect to the floor surface is unfavorable due to the adhesive properties thereof. In addition, these cleaning sheets may adhere to hands so it may be difficult to handle them at times.

[0004]

Therefore, this invention aims to obtain a cleaning sheet in which the slide with respect to the floor is favorable, and moreover, a sheet that does not adhere to hands so that handling is easy.

[0005]

Means to solve the problem

This invention premises, in order to solve said problem, a cleaning sheet for wiping dirt and contaminants off the floor surface. In said premise, this invention characterizes that at least one of the two sides of said sheet is comprised of a first surface area and a second surface area which is positioned above since it is separated from the floor when said first surface area contacts the floor surface, said first surface area has relatively weak adhesive properties or is non-adhesive, and said second surface area has relatively strong adhesive properties.

[0006]

Application examples

The details of the cleaning sheet related to this invention are explained by referring to the appended figures.

[0007]

Cleaning sheet (1) shown with a partially cutout perspective view in Figure 1 is comprised of base sheet (2) made of nonwoven fabric, middle sheet (3) in which both the top and bottom surfaces are sticky, and surface sheet (5) of a mesh material in which adhesive properties are weaker than sheet (3) or it does not exhibit adhesive properties at all. Surface sheet (5) has many through holes (4), is joined to base sheet (2) via middle sheet (3), and the sticky surface on the top surface side of middle sheet (3) is exposed by through holes (4). Middle sheet (3) and surface sheet (5) in the figure have approximately the same shape and size and superimpose, base sheet (2) has the same length as said sheets (3) and (5) but a greater width and has side edge parts (6) extending from the side edges of sheets (3) and (5).

[0008]

Figure 2 is a perspective view of cleaning sheet (1) attached to apparatus (11) for cleaning the floor surface. Apparatus (11) is comprised of plate shape part (13) and arm part (14) attached to plate shape part (13) so that it can pivot. Cleaning sheet (1) is contacted to the bottom surface of plate shape part (13), side edge parts (6) are folded over on the top surface of plate shape part (13), and fastened with clips (8) to be removable. Said apparatus (11) has arm part (14) and can wipe the floor surface with surface sheet (5) of cleaning sheet (1).



[0009]

In cleaning sheet (1) attached to apparatus (11), relatively light contaminants such as dust, etc. are captured by being entangled in the fibers of the nonwoven fabric composing surface sheet (5) or due to the adhesive properties, if there are adhesive properties, of surface sheet (5). Contaminants which are relatively heavy or have a shape that makes it difficult for them to be entangled in the fibers such as sand, etc. enter into through holes (4) of surface sheet (5) and are captured at the sticky surface of middle sheet (3) within through holes (4). The nonwoven fabric used for surface sheet (5) can be applied with a raising treatment, made bulky by use of crimped fibers, or impregnated with an oily agent so that capture of contaminants becomes easy. Also, surface sheet (5) can vary the depth of through holes (4) depending on the thickness thereof. It is preferable for elasticity (cushioning property) in the thickness direction thereof to be relatively favorable so that, while cleaning sheet (1) is in use, the sticky surface of middle sheet (3) will come suitably close to the floor surface regardless of the depth of through holes (4). In this cleaning sheet (1), edge part (16) of through holes (4) functions to scrape off the contaminants adhered to the floor and the contaminants which were scrapped off can be captured by through holes (4).

[0010]

In surface sheet (5) of cleaning sheet (1) used thus, the adhesive properties are made weaker than those of middle sheet (3) or it does not exhibit any adhesive properties so that the slide with respect to the floor surface is favorable.

[0011]

When attaching cleaning sheet (1) to apparatus (11), fingers will not adhere to a sticky surface if base sheet (2) and surface sheet (5) are held so that fingers do not contact middle sheet (3). Cleaning sheet (1) can be made into the same shape and the same size as middle sheet (3) and surface sheet (5) by omitting side edge parts (6) if it is not to be attached to apparatus (11).

[0012]

Figure 3 is a figure similar to Figure 1 showing an example of an applied mode of this invention. In this cleaning sheet (1), many discs (17) covering middle sheet (3) contact the floor surface instead of surface sheet (5) in Figure 1. Discs (17) are arranged on the top surface of middle sheet (3) by being mutually separated in the four directions and each disc (17) is formed by punching a felt or a nonwoven fabric of necessary thickness. When said cleaning sheet (1) is compared with that of Figure 1, in this sheet (1), the contaminants enter between adjacent discs (17) and reach the middle part of sheet (1) when the floor

surface is wiped so that here the chance for being captured by middle sheet (3) and the side surface of disc (17) increases. Therefore, the entire area of sheet (1) can be utilized efficiently.

[0013]

Figure 4 is a figure similar to Figure 3 showing another applied mode of this invention. In this cleaning sheet (1), plural band pieces (18) which mutually extend parallel in one direction cover middle sheet (3) and contact the floor surface instead of discs (17). For said band piece (18), anything that cuts a sheet composed of fibers such as felt, nonwoven fabric, etc. of necessary thickness into the necessary width and anything that is composed of felt, split fiber, etc. of relatively large diameter or bundles of these, etc. can be used.

[0014]

All that is necessary in this invention is for surface sheet (5) in Figure 1 which covers the sticky surface and is used to rub the floor surface or discs (17) or band pieces (18) in Figures 3 and 4 which replace the surface sheet to be joined to middle sheet (3) using the adhesive strength of said sheet (3). Middle sheet (3) and surface sheet (5) can be arranged on both sides of base sheet (2) and also used by turning over when one side of cleaning sheet (1) becomes dirty. Suitable sheet materials other than those shown in the figures can be used for base sheet (2) and middle sheet (3).

[0015]

Cleaning sheet (1) is suited for cleaning a floor surface but it can also be used for cleaning suitable areas such as walls, ceilings, etc.

[0016]

Effect of the invention

In the cleaning sheet related to this invention, the dirt wiping surface thereof is comprised of a surface with weak adhesive properties or nonadhesive properties which contacts the floor surface and a surface with strong adhesive properties which does not contact the floor surface. Thus, the slide with respect to the floor surface is favorable, and moreover, the sheet has strong capturing strength. Said cleaning sheet does not adhere to hands so that handling thereof is easy.

Brief description of the figures

[Figure 1] A partially cutout perspective view of a cleaning sheet,

[Figure 2] A perspective view of a cleaning sheet in a use state.

[Figure 3] A figure similar to Figure 1 showing an example of an applied mode of this invention.

[Figure 4] A figure similar to Figure 1 showing another example of an applied mode of this invention.

### Explanation of the symbols

(1)...cleaning sheet, (2)...base sheet, (3)...middle sheet  
(double sided adhesive sheet), (4)...second surface area,  
(5)...first surface area (nonwoven fabric), (17)..first surface  
area (disc), (18)...first surface area (band piece).

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